

Appl. No. 09/815,379
Amendment dated June 9, 2005
Reply to Office Action of December 15, 2004

REMARKS

Applicants respectfully request entry of the Amendment and reconsideration of the claims. Applicants have cancelled claims 42-46 and 51 without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of these claims in one or more continuation applications. Claim 1 has been amended to further clarify the claimed invention. Support for the Amendment is found throughout the specification as originally filed, including at page 52, lines 25-28. Applicants submit no new matter has been introduced by the foregoing Amendment. After entry of the Amendment, claims 1, 3,4, and 42-54 will be pending.

Utility

Claims 1, 3, 4, and 42-54 were rejected under 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph, as allegedly lacking utility. According to the Office Action, the claimed polypeptide does not have a specific and substantial utility. Applicants respectfully traverse this rejection.

The Examiner alleges neither the specification nor the art of record sets forth a substantial and well established utility for the claimed polypeptide because the Examiner contends that one of skill in the art must present evidence that the claimed polypeptide exists, that the claimed polypeptide is expressed, and that said polypeptide would predictably diagnose the presence of cancer. Applicants submit the asserted utility is substantial and well established and meets each of the criteria for utility.

Applicants only have the burden of presenting evidence that leads a person of ordinary skill in the art to conclude that the asserted utility is more likely than not true. MPEP § 2107.02 (emphasis in original). Applicants submit hBAZF (SEQ ID NO:4) has specific and substantial utility as a marker for angiogenesis. An angiogenesis marker such as hBAZF has utility in diagnostic assays. For example, Applicants disclose that detecting an increase in AAP (Angiogenesis Associated Protein) in a biological sample is useful for determining if an individual is afflicted with a disease or disorder, such as cancer (page 113, lines 25-32). Applicants also disclose that angiogenesis associated proteins (AAP) and nucleic acids, such as for example hBAZF, are useful in treating tumors and cancers (page 51, lines 11-14). The asserted utility is credible, specific and substantial to the claimed invention, and defines a real world use.

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The Examiner contends Applicants' asserted utility is not sufficient to satisfy the utility requirement because there is a valid and scientific reason for one of skill in the art to reasonably question the objective truth of the statement of utility. The Examiner alleges all of the previously cited references clearly establish that one of skill in the art cannot inevitably equate the production of mRNA with the production of protein. Applicants do not agree.

An asserted utility creates the presumption of utility. MPEP 2107.02(A). To overcome the presumption of truth Applicants' assertion of utility enjoys, the Examiner must establish that it is more likely than not that one of ordinary skill in the art would doubt the truth of the statement of utility. MPEP 2107.02(A) (emphasis added). The Examiner must provide evidence sufficient to show that the statement of asserted utility would be considered false by a person skill in the art. MPEP 2107.02(A) (emphasis added). The Examiner must present countervailing facts and reasoning sufficient to establish that a person skilled in the art would not believe Applicants' assertion of utility. MPEP 2107.02(A).

It is well known in the art that the primary role of RNA transcripts is to serve as templates for protein synthesis (see for example page 7, lines 1-4 of Alberts, B. 2002. *Molecular Biology of the Cell*. Garland Science, New York). Zlot et al., Horikoshi et al., Orntoft et al., and Futcher et al. clearly show an increase in mRNA correlates with an increase in protein. Therefore, one skilled in the art would more likely than not expect hBAZF polypeptide is expressed and that an increase in hBAZF mRNA correlates with an increase in hBAZF polypeptide expression.

The Examiner asserts the references cited by Applicants to show correlation of mRNA and protein levels are not conclusive. The Examiner, however, has failed to provide any evidence sufficient to show Applicants' asserted utility would not be considered more likely than not true by a person skill in the art.

The Examiner has not provided any countervailing facts and reasoning that establishes a person skilled in the art would find more likely than not that an increase in mRNA does not correlate with an increase in protein. For example, the Examiner alleges Futcher et al. does not apply to non-abundant and translationally regulated proteins. The Examiner, however, has not provided any evidence that shows hBAZF is non-abundant or translationally regulated and Futcher et al. conclude their data maintains a good correlation between mRNA and protein

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abundance even at low protein abundance (page 7367, second column). The Examiner alleges Futcher et al. conflicts with others in the field indicating the relative unpredictability of correlating mRNA expression with protein expression. Futcher et al., however, note the statistical analysis in the prior publication is only valid if mRNA and protein are assumed to have normal distribution when in fact both distributions are far from normal (page 7367, first column). In contrast, the statistical methods employed by Futcher et al. did not require the data to be normally distributed.

Applicants submit one skilled in the art would know how to use the claimed invention because the claimed invention is supported by a credible utility that is specific and substantial to the claimed invention. The Examiner has failed to provide any evidence or reasoning that establishes Applicants' asserted utility would be considered false by a person skilled in the art. Accordingly, withdrawal of the utility rejection under 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph, is respectfully requested.

Written Description

Claims 1, 3-4, and 42-54 were rejected under 35 U.S.C. § 112, first paragraph, as lacking written description. The Office Action alleges the claims lack written description because the recited structural features may have varying functional properties. Applicants respectfully traverse this rejection.

Claim 1 has been amended to further described the functional and structural characteristics of polypeptides at least 90% identical to that of SEQ ID NO: 4. Claim 1 recites hBAZF polypeptides comprising five Kruppel-like zinc finger motif repeats, a BTB/POZ domain, and have transcriptional repressor activity. In the specification, Applicants provide a description of SEQ ID NO: 4 and its characteristics at pages 52-53. Human BAZF has 83% amino acid sequence identity with mouse BAZF, a transcriptional repressor (see specification at page 52, lines 25-27). Like its mouse homolog, hBAZF contains a BTB/POZ domain and five Kruppel-like zinc finger motif repeats (see specification at page 53, lines 6-7). Applicants describe variants of hBAZF at page 74, lines 1-32, and page 75, lines 1- 20 of the specification. See, for example, the specification at page 74, lines 15-20:

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An AAP polypeptide variant will have at least about 80% amino acid sequence identity, preferably at least about 81% amino acid sequence identity, more preferably at least about 82%, 83%, 84%, 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98% amino acid sequence identity and most preferably at least about 99% amino acid sequence identity with a full-length native sequence AAP polypeptide sequence.

Moreover, based on a comparison of the amino acid sequence to human BCL6 as described in Okabe et al., BAZF polypeptide has homology to BTB/POZ domain, the zinc finger domain, as well as a middle sequence that is associated with transcriptional repressor activity. Thus, Applicants submit that one of skill in the art can readily identify the claimed polypeptides

Based on the above, Applicants maintain the specification provides sufficient written description of the claimed sequences. Withdrawal of this rejection is respectfully requested.

CONCLUSION

Applicants submit that the claims are in condition for allowance and notification to that effect is earnestly solicited. The Examiner is invited to contact Applicants' representative if prosecution may be assisted thereby.

Respectfully submitted,

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